CLAIM LISTING

1. (Previously presented) A method of synthesizing phenstatin comprising the steps of :

oxidizing 3-(tert-butyl dimethylsilyl)oxy-4-methoxybenzaldehyde with potassium permanganate to form the corresponding carboxylic acid;

converting said carboxylic acid to the corresponding acid chloride;

treating said acid chloride with the lithium derivative obtained from 3,4,5-trimethoxybenzene and t-butyllithium to form a protected product; and

deprotecting said protected product to form phenstatin.

2. (Previously presented) A method of synthesizing phenstatin prodrug comprising the steps of:

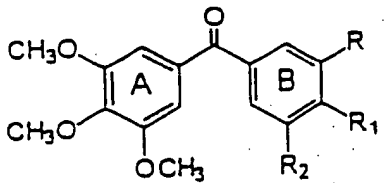
phosphorylating phenstatin with dibenzylphosphite in the presence of bromodichloromethane to form a phosphate ester;

cleaving the benzyl groups from said phosphate ester by means of catalytic hydrogenolysis; and

reacting the cleaved phosphate ester with sodium methoxide to produce the phenstatin sodium phosphate prodrug.

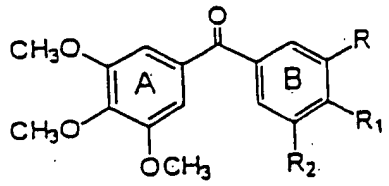
3. (Previously presented) A method of inhibiting cancer cell growth and tubulin polymerization in an environment inflicted therewith comprising: introducing into said environment a pharmaceutically acceptable carrier and a small but effective amount of phenstatin prodrug.

4. (Currently Amended) Phenstatin prodrugs and derivatives thereof having the structure:



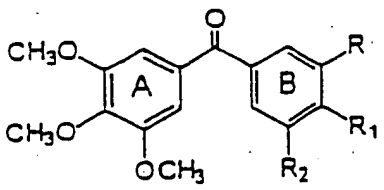
wherein when R=H and R_1 = OCH_3, R_2 is OPO_3Na or $OCOCH_3$ and when R=R_2, R_2 is OCH_3, CH_3, Cl or F and R_1 is H ~~and when R_1= R_2, R_2 is OCH_3 and R is H~~.

5. (Currently amended) A method of inhibiting human cancer cell growth in a host inflicted therewith comprising administering to said host in a pharmaceutically acceptable carrier a small but effective amount of a compound selected from the group consisting of phenstatin, phenstatin prodrug and the derivatives thereof having the structure



wherein when R=H and R_1=OCH_3, R_2 is OPO_3Na_2, $OCOCH_3$ or OCH_3 and when R=R_2, R_2 is OCH_3, CH_3, Cl or F and R_1 is H and when R_1= R_2, R_2 is OCH_3 ~~or OCH_2O~~ and R is H.

6. (New) A method of inhibiting human cancer cell growth in a host inflicted therewith comprising administering to said host in a pharmaceutically acceptable carrier a small but effective amount of a compound selected from the group consisting of phenstatin, phenstatin prodrug and the derivatives thereof having the structure



wherein when $R_1 = R_2$, R_2 is OCH_2O and R is H.